Abstract

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Evaluation of activity of potentional antibacterial substances through the use of microdilution broth method II

Diploma thesis

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The aim of this thesis was to test substances produced by the Department of Pharmaceutical Chemistry and Drug Control and the Department of Inorganic and Organic Chemistry Faculty of Pharmacy of Charles University in Hradec Králové.

Substances were tested by using microdilution broth method. Testing was carried out on eight strains of the bacteria: *Staphylococcus aureus, Staphylococcus aureus* methicilin resistant*, Staphylococcus epidermidis, Enterococcus sp., Escherichia coli, Klebsiella pneumoniae* and *Pseudoonas aeruginosa*. Overall were tested 97 substances, which were divided into ten groups according to their chemical structure to: derivatives of (Z)-5-arylmethyliden-2-thioxothiazolidin- 4-on, anilids of pyrazinocarboxyl acid, arylaminopyrazins, pyrazin-2,3-dikarbonitrils, esters of pyrazincarboxyl acid, N-(2-anilino-1-alkyl-2-oxo-ethyl)-2-hydroxy-benzamides, esters of cholesterol and alkan´s acids, salicylthioamids, styryl benzoxazols and benzoxazepin-dions.

The most effective was group of salicylthioamid derivates. Substances T5619 and T5621 took effect on whole spectrum of bacteria by low concentrations already. No antibacterial activity in specified concentration range had anilids of pyrazinocarboxyl acid, groups of styrylbenzoxazols and arylaminopyrazins minimally.

The most sensitive strain of all was the strain *Staphylococcus aureus* and *Staphylococcus aureus* methicilin resistant. On the contrary the most resistant strain was *Klebsiella pneumoniae* ESBL positive.